Thematic issue on trends in supramolecular chemistry

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In the late sixties, a new field dealing with intermolecular interactions was initiated. This domain, now called Supramolecular Chemistry, is concerned with the thermodynamics, kinetics and structural features of molecular recognition processes as well as with chemical transformations taking place subsequent to the association events. In the early stages, supramolecular chemistry dealt mainly with molecular complexes formed through reversible interactions between molecular receptors and substrates, usually ions. The first European Research Conference on Supramolecular Chemistry was organised in 1991 by J.-M. Lehn in Bischenberg. During this meeting, state-of-the-art research was discussed and one could already foresee that the area was moving towards more complex systems. Roughly 15 years later, another European Science Foundation conference entitled "Supramolecular Chemistry—Molecular Architectures and Systems" was held in 2005 in Obernai. During that meeting new trends in supramolecular chemistry were presented. In particular, one could see from the presentations that an extremely high level of sophistication has been reached over the last decade and a half. During that period, researchers, coming from a variety of different fields (synthetic and physical chemistry, polymer science, solid state and materials domains, *etc.*), have been active in developing new strategies and concepts dealing with the design and formation of complex molecular systems. The final goal of all the research presented is the design of complex systems displaying targeted properties and functions. Among the various approaches developed over this period for realizing such systems and architectures, one may mention two, which are the self-assembly and dynamic combinatorial strategies. Starting from rather simple molecules, these approaches are very powerful ways for generating architectural sophistication and/or functional control and open new opportunities for exploring molecular complexity.

This timely special issue of *NJC* presents some of the topics discussed during the meeting. The contributions in this issue were solicited after the meeting from the invited speakers and the poster prize winners and have been refereed through the standard *NJC* processes. In particular, we would like to mention that the work by Peter Broekmann and co-workers, which nicely highlights the interdisciplinary nature of the field of supramolecular chemistry, was awarded the *NJC* Interface Poster Prize at this ESF meeting.

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